

**REMARKS**

Upon entry of the instant amendment, claims 16-18, 20-29 and 35-44 will remain pending with claims 16-18, 20-21, 25-29 and 35-44 being withdrawn from consideration based on an earlier restriction requirement of the Examiner. Accordingly, claims 22-24 stand ready for further action on the merits.

In this Amendment, claim 22 has been amended. The support for this amendment can be found at page 8, lines 29-33 and at page 22, lines 1-2 of the present specification.

Accordingly, the present amendments to the claims do not introduce new matter into the application as originally filed. As such entry of the instant amendment and an early and favorable action on the merits is earnestly solicited at present.

***Rejection under 35 U.S.C. § 103(a)***

Claims 22-24 have been rejected under the provisions of 35 USC § 103(a) as being unpatentable over Slezak US '246 (US 2005/0170246) in view of both Eveready WO '740 (WO 01/86740) and Dowa JP '842 (JP 2001-283842).

**Legal Standard for Determining Prima Facie Obviousness**

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success.

Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

"There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a *prima facie* case of obvious was held improper.).

"In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other modification." *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in

the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The Supreme Court of the United States has recently held that the teaching, suggestion, motivation test is a valid test for obviousness, but one which cannot be too rigidly applied. See *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct 1727, 82 USPQ2d 1385 (U.S. 2007). The Supreme Court in *KSR Int'l Co. v. Teleflex, Inc.*, *ibid.*, reaffirmed the Graham factors in the determination of obviousness under 35 U.S.C. § 103(a). The four factual inquiries under Graham are:

- (a) determining the scope and contents of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating evidence of secondary consideration.

*Graham v. John Deere*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (U.S. 1966).

The Court in *KSR Int'l Co. v. Teleflex, Inc.*, *supra.*, did not totally reject the use of "teaching, suggestion, or motivation" as a factor in the obviousness analysis. Rather, the Court recognized that a showing of "teaching, suggestion, or motivation" to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a).

Even so, the Court in *KSR Int'l Co. v. Teleflex, Inc.*, *ibid.*, rejected a rigid application of the "teaching, suggestion, or motivation" (TSM) test, which required a showing of some

teaching, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the prior art elements in the manner claimed in the application or patent before holding the claimed subject matter to be obvious.

Accordingly, while the courts have adopted a more flexible teaching, suggestion, motivation (TSM) test in connection with the obviousness standard based on the *KSR v. Teleflex* case, which case involved a mechanical device in a relatively predictable technological area, it remains true that, despite this altered standard, the courts recognize inventors face additional barriers in relatively unpredictable technological areas as noted in *Takeda Chemical Industries, Ltd. v. Alphapharm Pty., Ltd.*, 83 USPQ2d 1169 (Fed. Cir. 2007).

Further, the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336, quoted with approval in *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

#### The Present Invention

Instant claims 22-24 are currently under consideration and recite as follows:

22. *An alkaline battery comprising a positive mixture molded in a ring shape comprising at least one selected from manganese dioxide and a nickel oxide as a positive active material and a negative mixture comprising a negative active material,*

*wherein the positive mixture comprises an alkaline electrolytic solution comprising potassium hydroxide,*

*an amount of water comprised in the positive mixture is 8.4 to 10wt% with respect to a total weight of the positive mixture including the alkaline electrolytic solution, and*

*the negative active material is zinc alloy powder, and a ratio of the zinc alloy powder that passes through a 200-mesh sieve is 4 to 40wt% with respect to a total weight of the zinc alloy powder. (emphasis added)*

23. The alkaline battery according to claim 22, wherein the zinc alloy powder comprises at least one selected from indium, bismuth, and aluminum.

24. The alkaline battery according to claim 23, wherein contents of the at least one selected from indium, bismuth, and aluminum comprised in the zinc alloy powder are 0.03 to 0.07wt%, 0.007 to 0.025wt%, and 0.001 to 0.004wt%, respectively.

#### Distinctions Over the Cited Art

The amount of water of about 1.5 to 8.0% described in paragraph [0087] of US 2005/0170246 (Slezak) is the amount of water of a positive mixture before molding. Furthermore, as to the amount of water after molding, the same paragraph [0087] describes that the amount of water is 6 to 8% in the case of impact molding, and the amount of water is 1.5 to 6% in the case of ring molding. The impact molding and the ring molding are then described in the paragraph [0090] of Slezak. (See paragraphs [0087] and [0090] of Slezak US 2005/0170246 that are set forth immediately below.)

[0087] The amount of water in the mixture, generally from about 1.5 to 8.0 percent, based on the weight of the solid, undissolved ingredients in alkaline cell cathodes prior to molding, affects electrode strength. A typical range for use in making impact molded cathodes is 6 to 8 percent. **A typical range for use in ring molding is 1.5 to 6 percent, with 2 to 4 percent giving improved strength while better assuring good cathode molding. (emphasis added)**

[0090] Two common methods of forming alkaline cell cathodes are ring molding and impact molding. In ring molding one or more (usually 3 to 5) rings are formed and then inserted into the can in a stack (one ring on top of another). Good physical and electrical contact between the can and the cathode are desirable. To achieve this the outside diameter of the rings may be made slightly larger than the inside diameter of the can to produce an interference fit, or the rings may be slightly smaller than the can to facilitate insertion, after which the rings are reformed slightly by applying force to the inside and/or top surface, thereby forcing cathode mixture firmly against the can. In impact molding the desired quantity of cathode mixture is put into the bottom of the can and molded to the desired dimensions using a ram that is inserted into the center of the can. Both methods have advantages and disadvantages. In some cells a ring molded cathode gives better high rate discharge capacity than an impact molded cathode. However, the cathode rings must be handled between molding and insertion into the can, generally requiring a stronger molded cathode than needed for impact molding. In making cells with higher interfacial electrode surface area, the ring molding process can have additional disadvantages. Because the formed electrodes are typically more fragile than those in conventional cells such as cell 10 in FIGS. 1 and 2, other means of strengthening the electrode may be necessary, as discussed above. If there are multiple stacked electrode rings in the cell, it may be necessary to orient all of the rings so the surfaces that coincide with the other electrode (e.g., the anode), adding complexity to the cell manufacturing process. (emphasis added)

On the other hand, the positive mixture in claim 22 of the present invention is a positive mixture after an alkaline battery is produced, and the amount of water of 8.4 to 10wt% of the positive mixture is an amount of water after molding.

Furthermore, by way of the instant amendment to claim 22, it is clarified that the positive mixture in claim 22 is a positive mixture molded in a ring shape, i.e., a positive mixture molded by ring molding. That is, the amount of water of 8.4 to 10wt% of the positive mixture in claim 22 of the present invention is the amount of water of a positive mixture molded by ring molding, which does not overlap with the amount of water of 1.5 to 6% in the case of ring molding taught in paragraph [0087] of the cited Slezak reference.

Based on the above considerations, it is submitted that instant claims 22-24 of the present invention cannot be rendered obvious under 35 U.S.C. 103(a) over Slezak (US 2005/0170246), WO 01/86740 (Eveready) and JP 2001-283842 (Dowa), since the secondary cited references are incapable of curing the above-noted deficiencies found in the primary cited Slezak US 2005/0170246 reference.

Furthermore, no teaching or disclosure is found in the cited art references that would allow one of ordinary skill in the art to arrive at the instant invention as claimed.

Likewise, one of ordinary skill in the art, upon considering the disclosures of the cited art references, would be provided with no reason or rationale to arrive at the instant invention as claimed.

Any contentions of the USPTO to the contrary must be reconsidered at present.

### CONCLUSION

In view of the above amendment, applicant submits that instantly pending claims 22-24 are in condition for allowance at present, and that the USPTO must issue a Notice of Allowance, clearly indicating that each of pending claims 22-24 are allowed and patentable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey, Reg. No. 32,881 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.147; particularly, extension of time fees.

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Respectfully submitted,

By 

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